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Alcohol and the Dental Team: Relevance, Risk, Role and Responsibility?

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Abstract

An enquiry about alcohol use, whenever a patient presents for dental treatment, is now firmly established within the taking of a social history. Dental professionals are well placed to provide relevant alcohol advice. Indeed it is now embedded within the training of undergraduates as required by the General Dental Council (GDC) in *Preparing for Practice* (1). As such practitioners need to be aware of recent changes in alcohol guidelines commissioned by the UK Chief Medical Officers. This paper explores alcohol related harm, screening tools to facilitate an enquiry and our roles and responsibilities for providing alcohol advice accepting the limited time available within the dental appointment.

Clinical relevance

Alcohol has both local and systemic affects. Understanding these effects, the recently updated guidelines and available screening tools is an important step towards supporting dental professionals in the provision of alcohol related advice. This paper covers some of the issues that will help achieve this.

Objective statement

The reader should be aware of the relevance of alcohol as a risk factor and how to assess patient alcohol intake relative to the recommended UK guidelines.

Introduction

A greater recognition of the adverse effects of alcohol both locally (on the oral cavity) and systemically has helped heighten the importance of asking dental patients alcohol relevant questions. As such recording alcohol intake is now firmly embedded within the taking of a social history.

One important reason for asking about the lifestyle risk factors of alcohol and tobacco, is their potential role in the development of various oral diseases, not least that of oral cancer.

It is important to note that this approach focuses on a small and (by comparison with other alcohol related harms) relatively rare disease. Although as dental health professionals the oral cavity is our natural environment, under the more encompassing scope of health professionals we hold the responsibility for understanding and delivering alcohol advice related to its broader effects too. As such our awareness should extend to its link to cancers of the larynx, phayrnx, breast, liver and colorectal cancer. There is also emerging evidence for an association with skin, pancreas, stomach, lung, gallbladder cancer, not to mention the role alcohol plays in the development of liver disease, mental health probelms, interpersonal and domestic violence as well as road traffic accidents.

It is important to note that many people who are at risk of alcohol related harms may not attend other health professionals such as their own medical practitioner. Evidence suggests that approximately 90% of the population in Scotland are registered with a dentists with 74% of those having attended in the past 2 years(2). Dentists are health professionals therefore well placed to deliver sensible alcohol advice to their patients.

Alcohol related risk is however not easily determined and often begs the obvious; What do patients think? Which question or questions should we ask in order to accurately identify a patient potentially at risk of alcohol related harm? How should we approach the subject? What makes an alcohol history difficult compared to tobacco for example?

Patient centred factors

When we enquire about tobacco use, the patient usually understands their relative exposure. Frequency and amount tends not to fluctuate greatly but other variables such as whether they roll their own cigarettes or use a filter are implicated. In general the patient has no vested interest in not telling the truth, and each day is fairly consistent; they smoke because of their addiction, which in turn drives the frequency of use.

However patients may believe that there is indeed little relevance in linking their alcohol consumption to a dental visit. This represents the first major hurdle we need to overcome, that is to highlight to patients: 1. Alcohol consumption does have an impact on oral health, most notably as a risk factor for oral cancer; and that 2. Dentists and dental care professionals are primarily healthcare professionals who, although specializing in the oral cavity, have a broader skill set and a wider responsibility for the health of their patients. Their advice may reasonably extend beyond the effects on the oral cavity.

For a patient to give an accurate alcohol record they need to engage with difficult mental acrobatics. That is to recall the different levels of consumption over time, days in a week that they take an alcoholic drink, types of drink, volumes of each and to also know the alcohol content of each drink which may vary widely. Thus there are a number of reasons why the patient may be unable to give an accurate response to the question; *"How much alcohol do you drink in a typical week?".* Adverse influences on accuracy of response may include uncertainty over volume or alcohol content consumed, fluctuating frequency of consumption, memory fade, the potentially sensitive nature of the subject, fear of being labeled with a drink problem or failure to appreciate the relevance to the dental setting.

That patients tend to underreport their alcohol intake is perhaps demonstrated best by the work of Boniface & Shelton (3). They compared what people reported they drank according to the General Lifestyle Survey (4) with the levels of alcohol that were actually sold. They discovered the equivalent of a 40% under reporting of what people say they drink in a typical week compared with alcohol sales. That is, what is declared in an official capacity (for example when completing a social history) might be inhibited by preconceived expectations or societal norms and so result in moderate estimates, whilst in social gatherings and in the

presence of peer pressure those norms might act in the reverse (actually increasing consumption).

Dentist centred factors

Several factors may influence a dentists approach to the 'alcohol' question. Topics mandated for regular CPD update (such as oral cancer) will furnish the dentist with information about risk factors such as alcohol but unfortunately factors persist in preventing engagement by dental professionals. The barriers and have been previously explained and reported (5, 6), and are closely entwined with dentist attitudes to alcohol, beliefs about a dentists role in delivering risk advice, the perceived relevance (or lack of) to dentistry by both dentist and patient, concerns about negative consequences, lack of confidence and potential embarrassment.

These barriers can make it difficult to engage but they do not absolve responsibility for doing so. Reports from GDC Fitness to Practice hearings have included critical accounts of dentists either not delivering or not recording the delivery of risk advice (because if its not recorded its assumed that it hasn't been addressed), whether the patient might admit to the use of relevant risk factors for oral cancer or not. As such *reasonable conditions* have been imposed on those failing to do so including personal development plans for the implementation of tobacco cessation and alcohol moderation advice. Indeed this is now thoroughly embedded in the GDC training standards of our dental undergraduate colleagues, in the evolution from *The First Five Years* to *Preparing for Practice*. The skills required on graduation now fall into 4 core domains of: *Clinical, Communication, Professionalism* and *Management/Leadership*. Arguably the taking of an accurate alcohol history may impact upon all 4 areas. However, some examples that serve to illustrate this include the following. Under the *Communication* domain (which applies equally to dentists, dental therapists and dental hygienists), Section 3.1;

> *"Communicate appropriately … when discussing issues such as alcohol consumption."*

Or under the *Clinical* domain in Section 1.10.7 (for dentists) which is indicative of involvement beyond the confines of the oral cavity that dentists on graduation should be able to;

"Evaluate the health risks of alcohol on oral and general health and provide appropriate advice and support."

For dental hygienists and dental therapists this falls within Section 1.10.6 as;

"providing appropriate advice, referral and support."

The directive is clear. Dental professionals should be involved in assessing risk and delivering appropriate and relevant risk advice. However, in the ever-changing world of health risk assessment how is it best to achieve that and what currently represents someone 'at-risk'?

The updated national guidelines on alcohol use within the United Kingdom.

In 2016, the Chief Medical Officers (CMO) published revised guidelines on alcohol intake for men and women in the UK. The new document entitled "*Alcohol guideline review – report from the Guidelines development group to the UK Chief Medical Officers*" (7) replaces the previous report entitled *Sensible drinking* which was published over 20 years ago in 1995. At that time, the panel had largely concentrated on the effects of alcohol on the body, especially the liver. Given the passage of time much more is now known about the influences of alcohol, not just on health, but also on society. To that end two work-streams were commissioned by the CMO in 2012. One work stream aimed to study the evidence base regarding health and the other to consider behavioral issues. Their report concluded that there was no evidence to suggest the alcohol limit should be raised for women [largely because of the strong link that had emerged from the *Million Women Woman Study* and since confirmed by others, of a link between alcohol intake and breast cancer (9)]. Rather they concluded that the guidelines for men should be reduced to that equivalent to the women (down from an average of 3 units/day and 21 units/week to 2 units/day or 14 units/week). This was in part due to a fear of mixed messages, not least arising from the previous advice that although 3 units was a so called safe daily maximum for men, they could (in any one occasion) drink up to 4 units, as long as they remained at or under 21 units for the total consumed in that week. Some chose to misinterpret this as 28 units (4 x 7 days), ignoring the 21 unit weekly level.

Another consideration within this reduction from 21 units to 14 units was the modeling exercise carried out by the Sheffield group reported within the CMO's guideline (7) and a decision to align the 'safe' level to an acceptance of a 1% lifetime risk of mortality from alcohol. Furthermore, the behavioural elements played into this, such as possibility of being killed in alcohol fueled violence or road traffic accidents. They also decided to emphasise that there is no safe level for alcohol intake (previous report was a safe level at or below 21 units/week for men and 14 units/week for women). Now it is 'advice' rather than a 'safe limit' not to exceed 14 units/week and no more than 2 units/day for both men and women.

Not surprisingly, the message for those women who are pregnant is *'don't drink alcohol'.*

In dentistry, the increasing number of oral cancers reported, and their continued association with alcohol (and tobacco) makes for a compelling case to moderate alcohol consumption. The Scottish Government passed legislation for bringing in 50p Minimum Unit Price for alcohol sales in Scotland in 2012. However, the drinks industry continues to challenge the rulings that have been made in Scottish, European and British courts. At the time of writing, this has still not been resolved. However, all pub measures are sold above the 50p/unit of alcohol. It is argued that access to cheap alcohol (mainly cider, but also vodka) is wrecking lives and could be reduced if cost was inflated.

Assessing how much alcohol is in a drink

Regardless of whether we ourselves drink alcohol, it is important to understand how alcohol intake is measured, so that we can advise our patients appropriately. In the UK, one unit of alcohol is equivalent to 8g of pure alcohol (or 10ml by volume). It is perhaps surprising to learn that this is not a universal 'currency', with the definition of a unit of alcohol varying widely throughout the world (Canada - 14g, Austria - 20g). In the UK, the number of units of alcohol within a drink can be calculated by multiplying the volume of the drink by alcohol concentration and dividing by 1000. For example; a pint of beer (568 mL) of 4.5% strength equates to approximately 2.5 units of alcohol.

$$\frac{\text{Volume} \times \text{ABV \%}}{} \qquad \frac{568\text{ml} \times 4.5\%}{} = 2.5\text{units.}$$

1000 1000

This information is often revealed on the label of the bottle being consumed. Otherwise (particularly for sales in licensed premises) this information is perhaps more easily calculated by use of a smartphone App on a mobile phone, for example – the *Mydrinkaware* version on the Drinkaware website. This also has the advantage of being able to track ones own intake over a course of time.

In terms of obtaining an accurate response to the alcohol history question, pictorial aids that illustrate what a unit is or the number of units in a typical drink for example a standard pub measure glass of wine, can be helpful (Figure 1). On average, a pint (4.5%) of beer will equate to 2.5 units, a large (175 mL) glass of wine (13.5%) is approximately 2.3 units, whilst a pub measure of a spirit (such as whiskey) 1 unit.

Figure 1. Descriptive illustration of the representative volumes of a unit of alcohol. (10)

NHS Health Scotland Alcohol & Oral Health Briefing Paper

NHS Health Scotland published, in 2012, the *Alcohol and Oral Health: Understanding Risk, Raising Awareness and Giving Advice* (NHS HSAOH). The document outlined the scale of the alcohol problem in Scotland, clarifying the link between alcohol and oral health.

As part of Scotland's alcohol strategy at the time, and under the umbrella of *the Changing Scotland's relationship with Alcohol: A Framework for Action* (12) document, the aim was to support the delivery of alcohol brief interventions (ABI) in the key areas of antenatal, A&E and primary care AND crucially develop delivery in a wider range of settings, including dentistry.

An ABI, in it's briefest and broadest definition might be defined as;

> *"Practices that aim to identify a real or potential alcohol problem and motivate an individual to do something about it." (13).*

The NHS HSAOH paper advised that, as a healthcare practitioner, dentists have an important role in facilitating the recognition of lifestyle risk factors in both individuals and communities and that they can support improvements in health and wellbeing by informing patients of those health risk factors.

There is good evidence of the effectiveness of ABIs in primary care for moderating the recipients drinking with a durable effect lasting potentially 12 months (14), and that they may even reduce alcohol related mortality (15). Importantly, although a strong evidence base is lacking, screening alone may initiate some change and simple advice may be as effective as longer interventions. That is, identifying the problem and straightforward advice may help patients towards moderate drinking. Recent research has been suggestive that even an ultra-brief (30 second) discussion by doctors about obesity may result in behaviour change.

How to recognize those who need advice?

Advice delivery is obviously contingent upon identifying those who are at risk. Screening provides a simple way to achieve this and there are plenty of screening tools available.

Some, although with potential utility, exclude themselves automatically for reasons of invasiveness (blood and breath tests), lack of brevity (the Michigan Alcohol Screening Test or MAST for example is over 20 questions long) or failure to capture immediateley relevant information. One such example, which was successful but has now been superceded is the CAGE screening tool. The CAGE broadly asked: Have you felt the need to **Cut down** on your drinking? Do you feel **Annoyed** by people complaining about your drinking? Do you ever feel **Guilty** about your drinking? Do you ever drink an **Eye-opener** in the morning? Despite the enormous affinity for the test, which may be in part due to it's ease of recall, it is recognized that it does not does not gather information on quantity, frequency or pattern of drinking.

A more robust test is the *Alcohol Use Disorders Identification Test* or AUDIT. This test, administered either verbally or in written form, is a 10-item validated (using a large multinational sample), sensitive and specific instrument for identifying problem drinking (See Figure 2.). Each item of the AUDIT is scored on a 5-point scale from 0-4, except the last 2 questions for which are just three options each scored as 0, 2 and 4. The sum of all 10-items gives a global score, the greater the score the more likely alcohol related harm is present, with the generally accepted risk thresholds of; less than 8 is considered low risk; 8-15 the individual is likely consuming to hazardous levels, 16-19 represents harmful drinking and; 20 or greater is probably representative of dependent use and would warrant referral to specialist services.

For reasons of brevity various shorter forms have been proposed, including the exploration of a single defining question which retains practical value for identifying problem drinking.

Scotland has gravitated towards the FAST – *Fast Alcohol Screening Test*. The FAST is a short version using 4 questions from the AUDIT with a score >3 indicative of a potential alcohol problem. The first question of FAST is modified from question 3 of AUDIT. Instead of; How often do you have more than 6 drinks on one occasion the modification is gender specific and asks; How often do you have **8 units** *(for a Man)* / **6 units** *(for a Women)* or more on one occasion? (Box 1).

The advantage of the modification is that by delivering this question 1st, over 50% of people will be classified using that question alone. If they answer either *Weekly* or *Daily or Almost Daily* (they will score 3 and breach the risk threshold) and warrant advice. If the individual does not respond with either of those answers then the subsequent questions are asked and a composite score of 3 from the remaining questiosn would indicate likely hazardous or harmful drinking (Box 2)(16, 17). This represents a quick and easy way to readily identify many patients with potential alcohol problems.

Box 1. Fast Alcohol Screening Test (FAST)

1. How often do you have **8 units** *(for a Man)* / **6 units** *(for a Women)* or more on one occasion?

Never *Less than Monthly* *Monthly* *Weekly* *Daily or Almost Daily*

2. How often during the last year have you been unable to remember

Never *Less than Monthly* *Monthly* *Weekly* *Daily or Almost Daily*

3. How often during the last year have you failed to do what was normally expected of you because you had been drinking?

Never *Less than Monthly* *Monthly* *Weekly* *Daily or Almost Daily*

4. In the last year, has a relative, friend, doctor or health worker been concerned about your drinking or suggested that you cut down?

No *Yes, on one occasion* *Yes, on more than one occasion*

Scoring

The FAST is scored according to response with 0, 1, 2, 3, 4 representing; Never, Less than monthly, Monthly, Weekly and Daily or almost daily respectively. The last question is scored as 0, 2, 4 for No, Yes on one occasion and Yes on more than one occasion respectively. A score is 0, 1 or 2 on the first question prompts continuation with the next three questions. A score is 3 or 4 on the first question or an overall total score of 3 or more is FAST positive and warrants the delivery of alcohol advice. In the dental setting simply undertaking the FAST screening process and raising awareness of consumption may be sufficient to elicit change.

The new UK Guidance - an opportunity?

An alternative question, or maybe in combination with the FAST (or the first question of FAST) would be to query a patient's weekly guideline amounts according to the CMO report. Two real advantages may be seen by adopitng this approach. Firstly, these weekly amounts are national government guidance, or in other words, we can suggest there is an external influence advising these figures (the dentist does not feel encumbered with the burden or responsibility of making a judgement about an individuals drinking). Secondly the new guidance may represent an excellent opportunity for the dental team to enter into discussions, gently engage and raise awareness. For example:

"I've noticed from your social history questionnaire that you are drinking 'x'. Were you aware that the guidance on how much we drink has recently changed…?"

BOX 2. Drinking definitions and harm.

The distinction between the different drinking patterns is an important one as it guides us as to who should receive advice. Those who are drinking to Hazardous or Harmful levels may benefit from alcohol related health advice in primary care. Those who are classified as dependent drinkers should remain the preserve of specialist alcohol services and an appropriate referral made.

Harmful drinking: *A pattern of alcohol consumption that is causing mental or physical damage.*

Hazardous drinking: *A pattern of alcohol consumption that increases someone's risk of harm. Some would limit this definition to the physical or mental health consequences (as in harmful use). Others would include the social consequences.*

Alcohol dependence: *A cluster of behavioural, cognitive and physiological factors that typically include a strong desire to drink alcohol and difficulties in controlling its use. Someone who is alcohol-dependent may persist in drinking, despite harmful consequences. They will also give alcohol a higher priority than other activities and obligations.*

Conclusion

It is clear that dental clinicians have a professional duty to enquire about alcohol intake. Our regulator has embedded the need to appreciate (and communicate) the health effects of alcohol, not only on the oral cavity but on general well being. Whilst not every oral cancer is associated with the use of alcohol or indeed tobacco, the increasing number of oral cancers (coupled with the estimation that every dentist sees on average two potentially malignant lesions per month) (18) should encourage us all to make and act on the results of such an enquiry.

Figure 2. The Alcohol Use Disorders Identification Test (AUDIT): Self-Report Version

Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year
10.Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year
					Total

Disclosures. Professor Graham Ogden is a member of the Medical Advisory Panel for *Drinkaware*.

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